

CLAIMS

What is claimed is:

1. An aluminum alloy, consisting essentially of the following constituents by percentage of weight:

5	6.5 to 8.5	percent silicon;
	0.6 to 1.0	percent iron;
	0.0 to 0.5	percent manganese;
	0.35 to 0.65	percent magnesium;
	0.0 to 1.0	percent zinc;
10	0.0 to 0.2	percent titanium;
	2.0 to 2.5	percent copper;
	0.0 to 0.15	percent one or more other elements; and
	aluminum as the remainder.	

2. The aluminum alloy of claim 1, wherein the aluminum alloy
15 comprises 7.2 to 8 percent silicon.

3. The aluminum alloy of claim 1, wherein the aluminum alloy
comprises to 0.6 to 0.8 percent iron.

4. The aluminum alloy of claim 1, wherein the aluminum alloy
comprises 0.45 to 0.6 percent magnesium.

5. The aluminum alloy of claim 1, wherein the one or more other elements is lead.

6. The aluminum alloy of claim 1, wherein the one or more other elements is chromium.

5 7. The aluminum alloy of claim 1, wherein the one or more other elements are lead and chromium.

8. A die cast product, comprising by percentage of weight:

6.5 to 8.5 percent silicon;

0.6 to 1.0 percent iron;

10 0.0 to 0.5 percent manganese;

0.35 to 0.65 percent magnesium;

0.0 to 1.0 percent zinc;

0.0 to 0.2 percent titanium;

2.0 to 2.5 percent copper;

15 0.0 to 0.15 percent one or more other elements; and
aluminum as the remainder.

9. The die cast product, of claim 8, wherein the die cast product comprises 7.2 to 8 percent silicon.

10. The die cast product of claim 8, wherein the die cast product
20 comprises 0.6 to 0.8 percent iron.

11. The die cast product of claim 8, wherein the die cast product comprises 0.45 to 0.6 percent magnesium.

12. The die cast product of claim 8, wherein the one or more other elements is lead.

5 13. The die cast product of claim 8, wherein the one or more other elements is chromium.

14. The die cast product of claim 8, wherein the one or more other elements are lead and chromium.

15 15. A method of making a die cast product by an SSM method of casting, comprising:

forming a semi-solid aluminum alloy, wherein the semi-solid aluminum alloy comprises by percentage of weight:

	6.5 to 8.5	percent silicon;
	0.6 to 1.0	percent iron;
15	0.0 to 0.5	percent manganese;
	0.35 to 0.65	percent magnesium;
	0.0 to 1.0	percent zinc;
	0.0 to 0.2	percent titanium;
	2.0 to 2.5	percent copper;
20	0.0 to 0.15	percent one or more other elements;

aluminum as the remainder; and

placing the aluminum alloy in a die cavity.

16. The method of making the die cast product of claim 15, wherein
the one or more other element is lead.

5 17. The method of making the die cast product of claim 15, wherein
the one or more other element is chromium.

18. The method of making the die cast product of claim 17, wherein
the one or more other elements are lead and chromium.

19. The method of making the die cast product of claim 15, wherein
10 the SSM method of casting is Rheocasting.

20. The method of making the die cast product of claim 15, wherein
the SSM method of casting is Thixocasting.